



Electricity Competition: The Story Behind the Headlines A 50-state Report

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Electricity Competition: The Story Behind the Headlines

A 50-state Report

Screaming headlines bring us the Enron scandals, California blackouts, phony electric trades and illegal accounting.

The Bush administration warns that the nation faces rolling blackouts unless it builds a power plant a week, and insists that the nation faces a severe energy crisis.

At first glance, electricity restructuring of wholesale markets in all 50 states that began with the passage of the Energy Policy Act in 1992, and the restructuring of retail markets that began in 1996, appear to be hopeless failures. But a look *behind* the sensational headlines shows a surprisingly different story.

Electricity becomes a bargain as electric industry restructures

In general, as measured by either inflation-adjusted dollars (constant dollars) or non-inflation adjusted dollars (nominal dollars), the price of electricity across the nation is substantially lower than it was in 1996. For most consumers, *there is no electricity crisis*. Instead, electricity is becoming a bargain.

The data demonstrates that the combination of wholesale restructuring in 50 states and retail restructuring in 22 jurisdictions is working well for most, though not all, consumers.

In constant dollars, electric prices went down for every major customer class nationwide from 1996 to 2001. When results in all states plus the District of Columbia are averaged, rates on average fell for residential customers by 13.67%; 13.0% for commercial customers; and by 4.8% for industrial customers.

For residential customers between 1996 and 2001, electricity prices in constant dollars fell in 48 out of 50 states. In states and the District of Columbia where retail generation monopolies were ended, residential rates declined on average 15.9% in constant dollars. Residential rates in states that maintained traditional retail monopolies declined 11.6%. Only the non-retail restructured states of Vermont and Hawaii saw residential electric prices rise in inflation-adjusted dollars during that period.

All 22 states, which includes the District of Columbia, that have restructured their retail electric markets to end generation monopolies had the same or lower residential rates in constant dollars in 2001 than in 1996. Sixteen of the 22 had the same or lower residential rates, even without adjusting for inflation.

And contrary to common expectations, residential rates in both retail and non-retail restructured states fell more than either commercial or industrial rates. So far the big dogs are eating least. In retail-restructured states, commercial rates are down on average 13.7% and industrial rates are down 4.5% in constant dollars. In states maintaining traditional retail regulation, com-

mercial rates are down 12% and industrial rates are down 4.8%.

In constant dollars, five states saw commercial rates increase, while 12 states experienced the same or higher industrial rates.

While electricity is generally becoming a bargain, other vital or popular products have increased sharply in price since 1996, and by doing so underline the superior consumer performance of the electricity industry. From the end of December 1996 to December 2001, cable TV rates rose 31%, prescription drugs hiked 24%, milk jumped 12%, bread spiked 14%, and college tuition escalated 26%. The overall inflation rate for that period was 11.34%.

Policies that introduce more competition into wholesale and retail electricity markets and require some of the competitive savings be passed to consumers as rate cuts are forcing prices down for most electricity customers. In addition to rate cuts made possible by retail restructuring, many consumers benefited from wholesale competition, which produced low prices during most of the period from 1996 to 2001. Another source of savings for some customers in retail-restructured states has been switching to competitive suppliers. Unfortunately, the number of customers switching and their savings could be much greater, but for the addition of so-called *stranded cost charges* to retail market prices.

Ironically, only industrial customers in states like Idaho, Louisiana, Montana, New Mexico, Oklahoma, Texas, and Washington have experienced large rate increases. In fact, industrial rates in Washington, Montana and Louisiana increased a shocking 76.3%, 38.6% and 35.0% respectively.

This is the true but untold story about restructuring.

Restructuring the electric industry

Since the passage of the Energy Policy Act in 1992, it has been national policy to restructure the nation's numerous, balkanized wholesale electricity markets. Less price regulation and more competition have been introduced. In addition, rules require that wholesale competitors have open access to and non-discriminatory pricing of transmission, which is still normally owned and operated by monopoly utilities. Investor-owned utilities, municipal utilities, rural electric cooperatives, and independent generators across the country have responded to these competitive reforms by increasing their focus on efficiency and reducing costs.

Responding to wholesale competition market reform, states began to end retail generation monopolies in 1996. Presently, the National Conference of State Legislatures considers 21 states plus the District of Columbia to have begun restructuring their retail electric markets. In most cases these states have adopted multi-

year transition plans to move from monopolized to competitive retail generation markets.

Retail restructuring fosters renewable energy

Retail-restructured states are leading the nation in renewable energy policy by creating funding for the transition to clean energy and by adopting Renewable Energy Portfolio Standards (RPS), which require increasing percentages of electricity supply to come from alternative energy sources like wind and solar power. Seventeen of 22 retail-restructured states have either some form of RPS or clean energy fund that receives revenues by dedicating very small portions of electricity revenues. Unfortunately, just two of the non-retail restructured states — Minnesota and Wisconsin — have a clean energy fund or RPS.

The data on rates and adoption of policies to spur more rapid adoption of clean energy technologies are powerful indicators that retail electricity restructuring is producing important consumer and public interest benefits. Again, electricity restructuring is more success than failure.

Yes, but is it deregulation?

Yet, most importantly, restructuring of neither wholesale nor retail electricity markets is accurately de-

scribed as *deregulation*. Typically, restructuring is a varied mix of increased use of markets combined with continued regulation and public policy interventions. In this respect, at least when electricity restructuring is done well, it requires a set of policies that pleases neither the ideological left nor the right.

Restructuring also doesn't mean the same thing in the wholesale market in the West as it does in the Mid-Atlantic. It certainly doesn't mean the same thing in the retail markets of Pennsylvania and California.

Electric restructuring done well requires smart rules and an appropriate mix or balance of market forces and government oversight (see page 11 for the 11 Smart Rules for Retail Electric Market Restructuring). Enforcement of rules and government oversight are vital to successful restructuring.

Indeed, the electricity industry can't be *deregulated*. Government has a vital and continuing role to play. Yet wholesale and retail restructuring that mix market competition and public policy can and are benefiting consumers and clean energy technologies which are vital for environmental protection.

Key Findings

Key findings on price

- Contrary to conventional wisdom, retail market restructuring policies benefited residential and smaller customers more than larger customers, although all customer classes have generally received savings.
- Residential rates
 - Rates for residential customers are the same or down in constant dollars in all 22 retail-restructured states including DC, and are the same or down even in nominal dollars in 16 of them.
 - Residential rates are down in constant dollars in 27 and in nominal dollars in 21 of the 29 non-retail restructured market states.
 - Seven retail-restructured states have cut residential rates by 20% or more, while three non-restructured states cut residential rates by that much.
 - In constant dollars, 10 states cut residential retail rates by 20% or more. Of these, seven are retail-restructured: Arizona, Connecticut, Delaware, Illinois, Maryland, New Jersey, and Ohio. By comparison, three non-retail restructured states cut rates by 20% or more: Kansas, Missouri, and Nebraska. The retail-restructured state of Illinois was the only state in the nation to cut residential rates by 30% or more.
 - The five worst performing states for residential customers were Hawaii, Louisiana, Nevada, Vermont, and Wisconsin. In these states residential rates either increased in constant dollars or fell by 5.0% or less. Four of these states — Hawaii, Louisiana, Vermont, and Wisconsin — maintain traditional retail regulation and electric generation monopolies.
- Commercial rates
 - Rates for commercial customers are down in constant dollars in 19 of the 22 retail restructured states including DC, and are down in nominal dollars in 16.
 - Commercial rates are the same or down in constant dollars in 27 and in nominal dollars in 19 of the 29 non-retail restructured retail market states.
 - In constant dollars, 11 states cut commercial rates by 20% or more. Of these, four are non-retail restructured and seven are retail restructured. The four non-retail restructured that cut commercial rates by 20% or more are: Arkansas, Kansas, Minnesota, and Missouri. The seven retail restructured states to cut commercial rates by 20% or more are Arizona, Connecticut, Delaware, Illinois, Maryland, New Jersey, and the District of Columbia.
 - Arkansas and Illinois again stand out as the only states to cut commercial rates by 30% or more.
- The five worst performing states for commercial customers were California, Hawaii, Louisiana, Maine, and Texas. In these five states, commercial rates rose in constant dollars by 1% to 6%. California, Maine, and Texas are retail restructured.
- Industrial rates
 - Rates for industrial customers are down in constant dollars in 16 of the 22 retail-restructured states including DC, and down in nominal dollars in eight states.
 - Industrial rates are the same or down in constant dollars in 23 and in nominal dollars in 15 of the 29 non-retail restructured retail market states.
 - A total of four states cut industrial rates in constant dollars by 20% or more: Alaska, Delaware, Illinois, and North Dakota. Delaware and Illinois are retail restructured.
 - Delaware is the only state to cut industrial rates by more than 30%, although Illinois by cutting industrial rates by 29.8% came close to reducing rates for each of its customer classes by 30% or more.
 - The single biggest rate increase for any rate class was 76.3% between 1996 and 2001 for industrial customers in non-retail restructured Washington.
- Twenty states plus the District of Columbia earn an *A* for reducing rates (measured in constant dollars) by more than the national average for each of the major customer classes: residential, commercial and industrial. States deserving an *A* are Arizona, Arkansas, Colorado, Connecticut, Delaware, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Maryland, Missouri, Nebraska, New Jersey, North Dakota, Pennsylvania, Utah, Virginia, West Virginia, and the District of Columbia.
- Six states earn a *B* for exceeding the national average rate reduction for two of the three major customer classes: Michigan, Mississippi, North Carolina, New Mexico, South Dakota and Tennessee
- Eleven states earn a *C* for exceeding the national average rate reduction for just one of the three major customer classes: Alabama, Alaska, Florida, Massachusetts, Minnesota, Nevada, New Hampshire, New York, Ohio, South Carolina, and Wyoming.
- Twelve states earn a *D* for failing to reduce rates for any rate class and for raising rates in constant dollars for one or two customer classes: California, Idaho, Louisiana, Maine, Montana, Oklahoma, Oregon, Rhode Island, Texas, Vermont, Washington and Wisconsin.
- One state, Hawaii, earns an *F* for raising rates in constant dollar terms for all customer classes.
- The best performing non-retail restructured state is Missouri with residential rates down in constant dollars by 24.0%, commercial rates down 22.8%, and industrial rates down 17.2%.

- The best performing retail-restructured state is Illinois, with 2001 residential rates down in constant dollars by 32.3%, commercial rates down 30.2%, and industrial rates down 29.8%.
- The worst performing non-retail restructured state east of the Mississippi is Vermont, with residential rates in constant dollars up 1.2%, commercial rates unchanged, and industrial rates down only 1.8%. Hawaii wins this dubious award in the truly far West category.
- The worst performing retail-restructured state is California. Rates are up for commercial and industrial consumers *and* the lights went out too many times to count in 2001.
- Washington State wins the notorious *Rate Gouger* award by raising industrial rates an incredible 76%. Most of us can be thankful that we aren't industrial electricity customers in Washington.

Key findings on renewable energy

- States that have restructured their retail electricity markets are leading the nation toward clean energy technologies by creating large funds to support clean energy projects and by requiring that an increasing percentage of the electricity supplied to consumers comes from renewable resources, such as wind or solar.
- By contrast, very few non-retail restructured states have created funds to support clean energy projects or adopted requirements for increasing the percentage of electricity that must come from renewable resources.
- Specifically, 13 restructured states have created state funds that will provide \$3.4 billion through 2011 to support the development of renewable energy and energy conservation: California, Connecticut, Delaware, Illinois, Massachusetts, Montana, New Jersey, New Mexico, New York, Ohio, Oregon, Pennsylvania, and Rhode Island. California leads the nation in funding clean energy technologies.
- Only two non-retail restructured states, Wisconsin and Minnesota, have clean energy funds to support clean energy projects.
- Nine restructured states have adopted full or partial Renewable Energy Portfolio Standards that require increasing percentages of electricity supplied within the state to come from renewable sources: Arizona, California, Connecticut, Maine, Massachusetts, Nevada, New Jersey, Pennsylvania, and Texas. Texas has the nation's most effective RPS, which produced 800 megawatts of wind energy in 2001 alone.
- Only one non-retail restructured state has full or partial Renewable Energy Portfolio Standards — Wisconsin requires that a modest 2.1% of its electric supply come from renewable resources by 2011.
- Four retail-restructured states earn an *A* for adopting key renewable energy policies. California, Connecticut, Massachusetts, and New Jersey all have both large clean energy funds and significant RPS's. No non-retail restructured states earned an *A*.

- Seven retail-restructured states earn a *B* for having a large clean energy fund or a significant RPS: Illinois, Maine, Nevada, New York, Ohio, Pennsylvania and Texas. No non-retail restructured states earned a *B*.
- Eight states earn a *C* for having a modest RPS or small clean energy fund: Arizona, Delaware, Minnesota, New Mexico, Montana, Oregon, Rhode Island, and Wisconsin. Wisconsin and Minnesota are non-retail restructured states, the other six are retail-restructured.
- 31 states earn an *F* for having neither an RPS nor clean energy funds to support financially renewable energy development.
- 27 of 29 non-retail restructured states receive an *F*: Alabama, Arkansas, Alaska, Colorado, Florida, Georgia, Hawaii, Idaho, Indiana, Iowa, Kansas, Kentucky, Louisiana, Mississippi, Missouri, Nebraska, North Carolina, North Dakota, Oklahoma, South Carolina, South Dakota, Tennessee, Utah, Vermont, Washington, West Virginia, and Wyoming.
- Four retail-restructured states earn an *F*: Maryland, Michigan, New Hampshire, and Virginia.

Major Conclusions

- ✓ There is no national electricity crisis or broader energy crisis as demonstrated by substantially declining power prices from 1996 – 2001.
- ✓ Electricity is becoming a bargain, as wholesale electric market restructuring proceeds nationally and retail electric restructuring continues in 20 states plus Washington, DC.
- ✓ Electricity rates for residential customers are down in retail-restructured states by 15.9% versus 11.6% in non-retail restructured states.
- ✓ Electricity rates for industrial customers are down 4.5% in retail-restructured states versus 4.8% in non-retail restructured states.
- ✓ Residential customers are receiving larger rate decreases than industrial customers from the combination of wholesale and retail restructuring.
- ✓ In several states such as Louisiana, Montana and Washington, industrial customers have suffered large rate increases.
- ✓ Retail-restructuring states are leading the nation in adopting key clean electricity policies like RPS's and clean energy funds.
- ✓ Electricity restructuring is producing major benefits for most, if not all, consumers, as well as clean electricity generation.
- ✓ Neither wholesale nor retail restructuring is accurately described as *deregulation*. Restructuring typically means mixing increased competition in the pricing of electricity with public policy protections and continued government oversight of markets.

Methodology

This Report looks at electric rates for residential, commercial, and industrial service charged in each state from 1996 to 2001. Additionally, the Report grades each state on renewable energy policy and the environment.

This Report also compares states that have restructured their retail electric markets, allowing consumers to choose a competitive electric supplier, to those states that have not restructured their markets and continue to have fully regulated retail monopoly electric utilities. When making such comparisons, readers should remember that to varying degrees wholesale markets in all 50 states have been made more competitive as a result of the Energy Policy Act of 1992 and Federal Energy Regulatory Commission orders. With the possible exception of Hawaii, virtually no state has been unaffected by wholesale and/or retail electricity restructuring.

Each state is placed into one of two categories — those that have restructured their retail electric industry to allow some or all of their electric customers to choose a competitive supplier, and those that have not. The Report uses information provided by Matthew Brown of the National Council of State Legislators to classify each state as *restructured* or *non-restructured*, with the exception of California.

The National Council of State Legislators (NCSL) classifies 21 states or jurisdictions as retail restructured: Arizona, Connecticut, Delaware, Illinois, Maine, Maryland, Massachusetts, Michigan, Montana, Nevada, New Hampshire, New Jersey, New Mexico, New York, Ohio, Oregon, Pennsylvania, Rhode Island, Texas, Virginia, plus Washington, D.C. Although California repealed retail choice in 2001, the analysis in this Report also classifies California as a retail-restructured state, since for most of the study period it was. With California placed in the restructured camp, 22 states or jurisdictions are counted as retail-restructured by this Report.

Based on NCSL data and Matthew Brown's update, this Report classifies 29 states as *non-restructured*: Alabama, Alaska, Arkansas, Colorado, Georgia, Florida, Hawaii, Idaho, Indiana, Iowa, Kansas, Kentucky, Louisiana, Minnesota, Missouri, Mississippi, Nebraska, North Carolina, North Dakota, Oklahoma, South Carolina, South Dakota, Tennessee, Utah, Vermont, Washington, West Virginia, Wisconsin, and Wyoming.

The study period begins in 1996 because that year saw the first four states pass retail restructuring legislation and begin the process of opening retail electricity markets to competition, while many other states were also moving in that direction.

The study uses an 11.34% price inflator to convert all prices into constant dollars and allow inflation-adjusted comparisons of 1996 and 2001 rates. The 11.34% inflator was calculated based on December-to-December data for 1997 to 2001 collected by the US Department of Labor, Bureau of Labor Statistics (www.bls.gov).

All electricity prices are from the US Department of Energy (DOE) and the Energy Information Administration. Go to www.eia.doe.gov or call Rodney Dunn at 202-287-1676 for more information. The 2001 prices are preliminary DOE data available from Stephen Scott at 202-287-1737 or www.eia.doe.gov/cneaf/electricity/epm/epmt55p1.html.

The national average results were calculated by taking each state's result and then computing an average for the nation. An alternative method that weights the amount of electricity used in each state produces similar but slightly different results. The alternative methodology concludes that national rates fell for residential customers by 15.4%, commercial customers by 12.8%, and industrial rates by 3.7%.

Each state is assigned a letter grade. An *A* is awarded to states that reduced 2001 rates for each of the three major customer classes at a rate faster than the national average.

A *B* is given to states that reduced 2001 rates faster than the national average for two of the three major rate classes.

A *C* goes to states that reduced rates faster than the national average for just one of the three major rate classes.

A *D* is the grade for states that failed to reduce rates for any customer class faster than the national average and increased rates in constant dollars between 1996 and 2001 for one or two major customer classes.

An *F* is the reward for raising rates in constant dollars for all customer classes.

In terms of renewable energy, the Report focuses on the two key policies states can adopt to promote its development and use — Renewable Portfolio Standards (RPS), which require over time that a growing percentage of electricity comes from renewable resources, and the formation of clean energy funds — because those policies would decrease pollution and its consequences created by the electricity industry.

Presently roughly 70% of all sulfur dioxide pollution, 30% of nitrogen oxide emissions, 30% of carbon dioxide pollution, and 18% of mercury contamination come from the electricity industry. These emissions cause acid rain, smog, global warming, habitat destruction, and human illness and death.

To track state action on RPS and clean energy technology financing, the Report uses research done by Mark Bollinger, et. al., entitled *States Emerge as Clean Energy Investors: A Review of State Support for Renewable Energy*, published in the *Electricity Journal* in 2001, as well as research done by the American Council for an Energy Efficient Economy (www.aceee.org).

The Report assigns an *A* to those states that have adopted a major RPS and created a major clean energy fund; a *B* to those states that have adopted either a major RPS or a large clean energy fund; a *C* to any state that has either an incomplete RPS or a small clean energy fund; and an *F* to any state that has neither. A

large clean energy fund is defined as receiving annual revenues of at least \$10 million, while a small clean energy fund is defined as annual revenues of less than \$10 million.

Examining rates and policies to promote renewable energy in each state produces insights into how the adoption or rejection of retail electricity restructuring is affecting consumers and the environment.

Analysis: Restructuring and Consumers

States have been famously described as the laboratories of democracy, where ideas and policies are tested on a smaller-than-national scale. In electricity policy, the states are playing this laboratory role in retail markets. Since 1996, 22 states including the District of Columbia changed their laws to allow electric consumers the legal right to choose a competitive electricity supplier.

Many states that ended retail generation monopolies did so in response to the federal government's restructuring of the nation's wholesale electricity markets, which began in 1992 with the passage of the Energy Policy Act (EPACT). EPACT restructured the wholesale electricity markets in virtually all utility service territories and in the wholesale electric markets that serve all 50 states.

Since 1992, the specifics of wholesale market restructuring in the 50 states have been left to the Federal Energy Regulatory Commission (FERC). Unfortunately, until Chairperson Pat Wood's arrival in June 2001, FERC failed to standardize vital operational details of wholesale energy markets. It also too often acted as though its mission was to deregulate but to leave electric monopolies intact, instead of overseeing the creation and operation of genuinely competitive wholesale markets. Since 2001, FERC has begun to undo earlier serious policy errors.

No one, however, disputes that in the decade since EPACT's passage, the electric industry underwent revolutionary change, driven mainly by wholesale market reforms and the prospect of allowing retail consumers to choose their electricity suppliers.

The debacle in California followed by the Enron scandal, however, stopped further movement toward allowing retail consumers to choose competitive suppliers and effectively caused California to repeal its consumers' right to choose their electricity providers. At this point, 29 states continue traditional retail regulation of electricity utilities' monopolies. No state regulates wholesale markets.

Ten years after EPACT and five years after retail electricity restructuring began is a good time to see how wholesale restructuring in all 50 states and the decision to restructure or not to restructure retail markets affects consumers and clean energy policies and alternatives.

This Report looks at residential, commercial, and industrial rates in all 50 states. Its basic conclusions that

electricity prices are generally going down for all customers, and more so for residential than industrial customers, will surprise some. Plainly, the combination of even imperfect wholesale restructuring in 50 states and retail restructuring in 22 states is producing lower electricity prices for most consumers. Restructuring is much more a success than a failure. Indeed, *electricity is becoming a bargain* and its decreasing cost stands in sharp contrast to water rates, cable TV rates, prescription drugs, college tuition and other items important to consumers.

Electricity prices strongly indicate that there is no current electricity crisis or broader energy crisis.

But while consumers continue to benefit from lower electricity prices, the electric industry causes huge amounts of environmental damage as a result of the pollution it pumps into the air, land, and water when burning fossil fuels to make electricity. This pollution contributes to documented public health and environmental crises like smog, acid rain, toxic pollution, and global warming.

This Report finds that overwhelmingly *it is those states that have restructured their retail markets that also have adopted important public policies to promote the electric industry's transition from traditional reliance on coal and nuclear energy to clean energy alternatives like wind, geothermal, and solar energy.*

By contrast, only two of 29 states that continue traditional regulation of electric generation monopolies have enacted Renewable Energy Portfolio Standards or created clean energy funds to advance the commercialization of renewable energy technologies.

Another major conclusion is that, taken together, *those states that have restructured their retail electricity industry have performed for consumers as well as or better than those states that have continued traditional retail regulation and maintained monopolies.*

Seven retail-restructured states have cut residential rates by 20% or more, while three non-restructured states cut residential rates by that much. The retail restructured state of Illinois was the only state in the nation to cut residential rates by 30% or more.

Perhaps most surprising to some, this Report documents the finding that in retail restructured states, residential consumers have benefited most, more so than commercial and industrial customers. *All 21 restructured states plus the District of Columbia in 2001 had residential rates measured in constant dollars that were below 1996 levels.* Moreover, residential consumers enjoyed rate reductions that were nearly three times larger than those received by industrial consumers.

Best states for electric consumers

By far and away the best state for consumers was Illinois. Residential rates declined by 32.3%, commercial rates by 30.2%, and industrial rates by 29.8%. A truly remarkable performance.

As a group, the retail restructured states of the Mid-Atlantic region also did very well. Rates in Delaware,

Maryland, New Jersey, Pennsylvania, and Washington DC are all down sharply. Lower rates in this region reflect the nation's best and most competitive wholesale electricity market known as PJM and state retail restructuring policies.

The PJM spot market since 1999 has cleared at about 3 cents per kilowatt-hour. One-year wholesale forward contracts have fluctuated during that period between roughly 2.8 cents and 5.0 cents per kilowatt-hour within PJM, with recent prices at the low end of the range.

By comparison, in 1996, the unbundled generation portion of the regulated residential rate charged by Pennsylvania utilities ranged from about 3.5 cents to 8.5 cents per kilowatt-hour. In PJM, market prices have usually been well below 1996 regulated generation rates.

But lower prices within PJM have *not* come at the cost of decreased reliability. PJM met record demand for electricity in both 1999 and 2001. The breakdown rate of PJM power plants decreased 50% from 1996 to 2001, as owners faced lost revenue if plants could not operate.

For these impressive reasons, PJM has in many ways become a model for FERC and the nation.

Other states that had strong consumer performance include Kansas and Missouri, both of which provided large rate reductions to all three customer classes. Both are non-retail restructured states.

Worst states for electric consumers

Louisiana and Washington win our award for worst performing non-retail restructured states. Washington raised industrial rates an incredible 76.3%. Louisiana raised industrial and commercial rates and nearly raised residential rates. We'll let Hawaii off the hook because, well, it's Hawaii. But it should do better.

Other poorly performing non-retail restructured states east of the Mississippi for consumers are Wisconsin and Vermont.

Maine was the worst performing retail-restructured state east of the Mississippi. From 1996 to 2001, Maine raised its commercial rates in constant dollars by 3.1% and industrial rates by 20.4%.

The picture, however, was no prettier in retail-restructured California, where industrial rates are up in constant dollars by 6.8% and commercial rates by 0.4%. At least for higher real rates, California could have kept the lights on. It wins the award for the worst performing retail-restructured state for consumers.

The single biggest rate increase for any rate class was 76.3% between 1996 and 2001 for industrial customers in non-retail restructured Washington.

Analysis: Restructuring and Renewable Energy

The decision to restructure or not to restructure should be judged by factors other than rates paid by consumers, since the electric industry so significantly affects human health and the environment.

Nationally, 55% of electricity comes from coal-fired plants and 20% from nuclear plants that are running out of on-site storage space for their highly toxic nuclear waste. Renewable sources of electricity other than large-scale hydroelectric facilities generate roughly 2% of the nation's electricity. Unfortunately, the environmental impact of the electric industry's heavy reliance on burning coal — in often old plants that don't have modern pollution control technologies — has been hugely negative and much bigger than its approximately 2% share of the gross national product would indicate.

Traditional electric regulation and electric monopolies have created today's reality, where the electric industry produces about 70% of all sulfur dioxide pollution, 30% of carbon dioxide, 30% of nitrogen oxide and 18% of mercury emissions. The industry also pumps into the air large amounts of particulate matter — or microscopic dirt — that is a major cause of human illness.

Pollution from the electric industry is a leading cause of smog that sickens and kills humans, acid rain that is damaging forests and streams, toxic pollution that is contaminating the food chain, and global warming.

Cleaning the electric industry is a big task and requires leadership from the industry as well as the federal and state governments. A key to this clean up is to substantially increase the amount of electricity generated by non-polluting, renewable energy power plants. Each state can influence the transition to renewable energy by adopting or failing to implement policies that benefit renewable energy.

While states can do a range of things to promote renewable energy, such as purchasing renewable energy for state facilities or creating green power pricing programs for consumers, the best policies to foster renewable energy are Renewable Energy Portfolio Standards and clean energy funds. An RPS requires that over time an increasing amount of a state's electricity supply comes from renewable resources. Clean energy funds are pools of money, usually raised by a small charge on transmission or distribution, that financially support renewable energy development.

Retail-restructuring states lead on renewable energy policy

Through clean energy funds and RPS requirements, retail-restructured states — far more so than states without retail restructuring — are providing dollars and support for moving the electric industry toward renewable energy. Only two of 29 non-retail restructured states have an RPS or clean energy fund, while 17 of 21 restructured states have implemented either a RPS

or a clean energy fund or both. To date, retail restructuring boosts renewable energy, while the decision not to restructure means no RPS or clean energy fund.

Specifically, *13 restructured states have created state clean energy funds that will provide \$3.4 billion of funding through 2011* to support the development of renewable energy and energy conservation. They are California, Connecticut, Delaware, Illinois, Massachusetts, Montana, New Jersey, New Mexico, New York, Ohio, Oregon, Pennsylvania, and Rhode Island. California leads the nation on providing financial support for the commercialization of clean energy alternative technologies.

Nine restructured states have adopted full or partial Renewable Energy Portfolio Standards that require increasing percentages of electricity supplied within the state come from renewable energy power plants: Arizona, California, Connecticut, Maine, Massachusetts, Nevada, New Jersey, Texas, and Pennsylvania, although Pennsylvania's RPS is limited to competitive default supply service in four utility service territories.

California, Connecticut, Massachusetts and New Jersey stand out for their leadership by adopting both substantial RPS requirements and clean energy funds.

Unfortunately, just two non-retail restructured states, Wisconsin and Minnesota, have clean energy funds to support renewable energy and only one non-restructured state, Wisconsin, has a modest RPS.

We challenge the non-retail restructured states to adopt clean energy funds and Renewable Portfolio Standards.

Lessons Learned

After a year or more of stories about California and the Enron debacles, the emerging conventional wisdom tells us that wholesale and retail electricity restructuring (usually incorrectly labeled *deregulation*) are hurting consumers and promoting the traditional reliance on coal and nuclear power. Conventional wisdom also maintains that electric restructuring, if it were to benefit any group, would benefit industrial and not residential customers.

But the numbers in this Report tell a different story. In fact, so far, the very imperfect and incomplete wholesale market restructuring in all 50 states and the retail restructuring in 21 states plus the District of Columbia, are benefiting all consumers generally, but residential consumers most of all.

Importantly, this Report also finds that retail-restructuring states are overwhelmingly the ones that have adopted one or both of the two key policies — RPS's and clean energy funds — that best assist renewable energy development. Non-retail restructured states are laggards on implementing these vital renewable energy policies.

Moreover, in the last 10 years, coal and nuclear plants have captured virtually none of the new generation market. Instead, efficient natural gas plants with modern pollution control technology are dominating the

new generation market. Also, in 2001 wind energy had its strongest year ever, with more than 1,700 megawatts of new wind power built. About half of this total was built in Texas and resulted from Texas' best-in-the-nation RPS.

Six top questions

- why have most retail-restructured states reduced consumer rates, while a few like California produced rate increases mainly for industrial customers?
- why have nearly all retail-restructured states launched important clean energy policies?
- why have only Minnesota and Wisconsin out of 29 non-retail restructured states authorized RPS's or clean energy funds?
- why have industrial customers in some states seen rates increase sharply?
- why are residential customers benefiting most from the combination of wholesale and retail restructuring?
- what trends are emerging that will affect how consumers in restructured and non-restructured states will fare in 2002 and beyond?

Answers to these questions vary by state and by region. But some broad general trends hold. Traditional regulation of investor-owned electric monopolies is a difficult task, and few states have done it well for long periods of time. In many states, large utilities are highly influential in the selection of regulators and the independence of regulatory bodies is never guaranteed.

Even when done by independent, objective regulators, the regulatory enterprise is complex, requiring massive amounts of information that is not completely available, expertise in many areas like engineering, accounting, finance, and law, as well as the judgment of Solomon. For these reasons, regulation has often resulted in massively bad decisions, like requiring consumers to pay billions of dollars for horribly uneconomic nuclear plants —which would never have been financed without captured customers and regulatory orders requiring large rate hikes.

It's often thought that regulators protect residential customers, since they are the voters. But in fact, under regulation, *industrial* customers have often used the threat of self-generation or leaving a service territory to leverage favorable rates. They benefited from a type of competition before restructuring began. As a result, it's not surprising to us that industrial customers have seen lower rate reductions nearly everywhere and even increased rates in a number of states. Nor is it surprising to see that residential customers in non-retail restructured states have done less well than those in retail-restructured states. Residential customers in non-retail restructured states still have no leverage and must rely on the independence and knowledge of regulatory bodies.

Instead of favoring industrial customers, wholesale and retail restructuring has most benefited residential customers. In retail competition states, the restructuring process has created leverage for residential customers,

which has led to rate cuts and caps and other benefits for low-income consumers. For example, 80,000 poor households in the PECO service territory in Pennsylvania have had their total rates cut by up to 50% since 1999 as a result of restructuring.

It's also not surprising to see that states maintaining traditional regulation have almost universally failed to adopt Renewable Portfolio Standards or clean energy funds. Most public utility regulatory bodies have economic and not environmental missions, or they choose to define their work in that way. Consequently, non-restructured states typically lag behind on renewable energy policy.

Restructuring, however, creates a moment where everything is under review and on the table. Environmental advocates in most restructuring states have used the restructuring opportunity to push a fundamental change in mission so that now most restructuring states are promoting renewable energy through public policy.

During the transition to competition, restructuring states also seek to protect the financial stability of their local utilities, benefit consumers, and develop a competitive retail market. There is some tension between these goals, and states have pursued them with three basic policies that vary importantly in the details. These policies mix market forces and public policy in different ways.

Protecting the financial stability of local utilities

To protect the financial stability of utilities, restructuring states have nearly without exception authorized so-called *stranded cost charges* paid to utilities by consumers who both switch to a new company and by those that don't. The stranded cost charge is typically between 0.5 cents and 5.0 cents per kilowatt-hour. It should represent the portion of the regulated rate that is above the competitive price of electricity and reflect the amount of generation investment made under traditional regulation that lower competitive prices would not support.

Revenues raised by the stranded cost charge go to utilities to pay off their uneconomic or non-competitive investments in generation made prior to restructuring. It's important to understand that the stranded cost charge is always a portion of the old regulated rate and that it is added to the competitive price of energy. Its addition to the competitive price of electricity makes it difficult for competitive suppliers to deliver savings to consumers and hinders retail competitive markets. Stranded cost charges conceal from consumers what are in most cases much lower market prices.

Benefiting consumers

To benefit consumers while stranded costs are being paid to utilities, restructuring states have capped rates for the generation portion of the bill and sometimes the transmission and distribution segments of the regulated rate. They have also implemented temporary and sometimes multi-year rate cuts in order to ensure that a portion of the savings from competition reaches consumers.

Developing a competitive retail market

To commence a transition to a competitive retail market, each state has established a target price that competitors must beat that is variously called the *price to compare*, the *default rate*, or *price to beat*. These target prices that competitors must beat have always been much lower than what the monopoly utility charged for generation service during regulation and prior to competition.

In many cases, target prices have been set at levels ridiculously below the historic, regulated utility rate for generation. For example, California set a target price for retail competitors that was basically equal to the wholesale price of electricity (which was very low until the summer of 2000), and about 5 cents below what California's investor-owned utilities were charging residential consumers for generation under traditional regulation.

These low target prices plus the addition of stranded cost charges to the competitive price of electricity means that many states have made it impossible for competitors to offer savings to retail customers, even though the competitive price of electricity is often well below the regulated generation rate.

Finding the right mixture

Successful restructuring states are succeeding because they have found the right mixture of stranded cost charges, rate cuts and caps, and target prices for competitors. Successful restructuring states have also normally had the benefit of a reasonably competitive wholesale market.

The Mid-Atlantic states of New Jersey, Maryland, Pennsylvania, and Delaware, plus the District of Columbia owe a major portion of their restructuring success to the good but not perfect work of the PJM independent system operator, which operates the largest and best wholesale market in America. The competitive wholesale market in PJM has produced spot energy prices that have averaged approximately 3 cents per kilowatt-hour for three years. The spot energy price has been as much as 5 cents less than the up-to-8 cents regulated utilities charged residential consumers just for generation prior to restructuring. Within PJM, market prices have generally been less than the established rate caps.

In sharp contrast to the well-functioning PJM and the New England Power Pool, failed wholesale markets in California and many western states have meant that retail consumers in most retail-restructured and non-retail restructured states of the West have faced sharply higher retail rates. This wholesale market failure led to a breaking of the rate caps by California and much higher rates that devoured most of the earlier rate cuts. In non-retail restructured Idaho and Washington, retail consumers saw rates explode too, by as much as 76% for the industrial consumers of Washington.

The West's wholesale market failure is rooted in California's policy of mandatory divestiture of power plants and the mandatory sale and purchase of all en-

ergy from spot markets. Layered on those epic errors were disastrous stranded cost recovery policies and target prices for retail competitors that were designed to keep out competitors and to speed up payment of billions of dollars in stranded costs to California's major utilities. The final blows were failure to create demand-side infrastructure to enable consumers to benefit from high wholesale prices by reducing energy usage, and broad resistance throughout western states to a regional independent system operator to oversee the regional wholesale market.

The huge damage done by these policy errors was magnified by drought conditions that reduced hydroelectric production, market manipulation by unscrupulous traders, and craven regulatory reaction by the Federal Energy Regulatory Commission prior to June of 2001, when it was liberated by new leadership.

In 2002, trends are beginning to emerge that suggest that consumers in retail-restructuring states may further benefit. For example, large stranded cost charges are beginning to expire. In the Duquesne Electric service territory, serving the Pittsburgh area in Pennsylvania, the removal of stranded cost charges led to a total residential rate cut of 16% and returned electric rates to the early days of the Reagan presidency, when a stamp cost 20 cents and the minimum wage was \$3.35. Wholesale electric prices have sharply declined and restructured states are often in a good position to quickly pass these price declines through to retail customers, as demonstrated by the recent 15% rate cuts announced by two major Massachusetts utilities.

How Does Pennsylvania Rank?

- Earns an *A* for reducing rates for each customer class by more than the national average rate. Residential rates are down in constant dollars by 20%; commercial rates are down by 16%; and industrial rates by 17%.

- Reduced 2001 rates below 1996 levels for all customer classes in both constant and non-inflation adjusted dollars.
- The average Pennsylvania residential rate in 2001 was 8.7 cents per kilowatt-hour and would have been 10.8 cents had 1996 rates increased at the rate of inflation.
- The average Pennsylvania commercial rate in 2001 was 7.8 cents per kilowatt-hour and would have been 9.3 cents had 1996 rates increased at the rate of inflation.
- The average Pennsylvania industrial rate in 2001 was 5.5 cents per kilowatt-hour and would have been 6.6 cents had 1996 rates increased at the rate of inflation.
- Pennsylvania's average industrial rate was 1.33 cents above the national average in 1996. In 2001, Pennsylvania average industrial rate was just 0.56 cents above the national average. The average rate for each customer class in 2001 has declined and moved much closer to national averages. Pennsylvania's electricity rates are becoming more competitive with other states.
- Pennsylvania earns a *B* on renewable energy policy for creating clean energy funds during restructuring. These funds should be increased.
- Pennsylvania has a very limited Renewable Portfolio requirement that should be expanded. Only the competitive default supply program includes an RPS, and that program is only operating partially within the PECO service territory, although it is authorized for the PPL, Allegheny, and First Energy/GPU service territories.

In the End

Electricity restructuring will be an ever-evolving process in the US. But evidence and not hype shows that it should and can continue, and that making electricity cleaner, more efficient, and more affordable is not only plainly possible, but in every consumer's best interest.

11 Smart Rules for Retail Electric Market Restructuring

1. A wholesale electricity market serving a state must be of sufficient size and operate in accordance with standard market design to create conditions for genuine wholesale competition, prior to retail restructuring.
2. A wholesale electricity market must be operated by a genuinely independent organization that is charged with maintaining reliability and ensuring workably competitive markets.
3. There must be robust market monitoring of electricity markets to identify and prevent market manipulation, conducted by the independent organization operating regional wholesale markets as well as state and federal regulatory agencies. Penalties for market manipulation should be large and serve as real deterrents.
4. States making the transition to competitive retail electricity markets should not rush into it. An effective transition period takes about 10 years.
5. During the transition period, all retail consumers should have meters upgraded and appliance control devices installed that allow them to voluntarily change their demand for electricity in response to different prices of electricity based on time of day and season. States should have *demand-response* programs that have 5% to 10% of consumers responding to price in real time.
6. Stranded cost recovery may be necessary to protect the financial stability of utilities but it should be recovered in a manner that minimizes negative impact on retail market development. Consistent with the financial stability of the utility, the transition default rate or price to compare should be set as close as possible to the utility's historic or embedded regulated generation rate.
7. Budgets for programs that ensure low-income households access to electricity and deliver energy conservation should be maintained or increased during the transition. Benefits of energy conservation programs include protection of reliability, reduction of peak demand and prices, and lower over-all prices.
8. Each state should create alternative energy funds to increase the supply of renewable energy generated from the wind, biomass, geothermal, low-impact hydro, and solar.
9. Each state should adopt a Renewable Energy Portfolio Standard designed to require that 10% of a state's electricity supply comes from clean, renewable energy sources within 10 years.
10. Each state should ensure that interconnection and net metering policies promote clean distributed power sources or personal power units, like fuel cells or solar, that can be installed at a customer's premises.
11. States must carefully consider policies requiring divestiture of generation and must ensure that electricity supply can be contracted for short and long periods.

State Grades on Consumer Rates for Electricity

<i>State</i>	<i>Grade</i>	<i>Restructured?</i>	<i>State</i>	<i>Grade</i>	<i>Restructured?</i>
Alabama	C	N	Montana	D	Y
Alaska	C	N	Nebraska	A	N
Arizona	A	Y	Nevada	C	Y
Arkansas	A	N	New Hampshire	C	Y
California	D	Y	New Jersey	A	Y
Colorado	A	N	New Mexico	B	Y
Connecticut	A	Y	New York	C	Y
Delaware	A	Y	North Carolina	B	N
District of Columbia	A	Y	North Dakota	A	N
Florida	C	N	Ohio	C	Y
Georgia	A	N	Oklahoma	D	N
Hawaii	F	N	Oregon	D	Y
Idaho	D	N	Pennsylvania	A	Y
Illinois	A	Y	Rhode Island	D	Y
Indiana	A	N	South Carolina	C	N
Iowa	A	N	South Dakota	B	N
Kansas	A	N	Tennessee	B	N
Kentucky	A	N	Texas	D	Y
Louisiana	D	N	Utah	A	N
Maine	D	Y	Vermont	D	N
Maryland	A	Y	Virginia	A	Y
Massachusetts	C	Y	Washington	D	N
Michigan	B	Y	West Virginia	A	N
Minnesota	C	N	Wisconsin	D	N
Mississippi	B	N	Wyoming	C	N
Missouri	A	N			

State Grades on Environmental Policies on Electricity

<i>State</i>	<i>Grade</i>	<i>Restructured?</i>	<i>State</i>	<i>Grade</i>	<i>Restructured?</i>
Alabama	F	N	Montana	C	Y
Alaska	F	N	Nebraska	F	N
Arizona	C	Y	Nevada	B	Y
Arkansas	F	N	New Hampshire	F	Y
California	A	Y	New Jersey	A	Y
Colorado	F	N	New Mexico	C	Y
Connecticut	A	Y	New York	B	Y
Delaware	C	Y	North Carolina	F	N
Florida	F	N	North Dakota	F	N
Georgia	F	N	Ohio	B	Y
Hawaii	F	N	Oklahoma	F	N
Idaho	F	N	Oregon	C	Y
Illinois	B	Y	Pennsylvania	B	Y
Indiana	F	N	Rhode Island	C	Y
Iowa	F	N	South Carolina	F	N
Kansas	F	N	South Dakota	F	N
Kentucky	F	N	Tennessee	F	N
Louisiana	F	N	Texas	B	Y
Maine	B	Y	Utah	F	N
Maryland	F	Y	Vermont	F	N
Massachusetts	A	Y	Virginia	F	Y
Michigan	F	Y	Washington	F	N
Minnesota	C	N	West Virginia	F	N
Mississippi	F	N	Wisconsin	C	N
Missouri	F	N	Wyoming	F	N

Estimated U.S. Electric Average Rates per Kilowatt-hour to Ultimate Consumers * *in cents*

Rate Chart 1
1996 Inflation Adjusted

	RESIDENTIAL				COMMERCIAL				INDUSTRIAL		
	1996	2001	%		1996	2001	%		1996	2001	%
New England:											
Connecticut	13.4	10.5	-21.8		11.5	9.0	-21.5		8.8	7.6	-13.3
Maine	14.0	12.8	-8.7		11.5	11.9	3.1		7.0	7.0	0.0
Massachusetts	12.5	11.8	-5.9		11.1	9.7	-12.5		9.4	8.7	-7.4
New Hampshire	15.0	13.3	-11.2		12.6	11.0	-12.8		10.2	9.3	-8.9
Rhode Island	13.2	12.0	-8.9		11.3	10.2	-9.8		9.5	9.2	-3.0
Vermont	12.3	12.4	1.2		11.3	11.3	0.0		8.5	8.3	-1.8
Mid-Atlantic:											
Delaware	10.0	7.7	-23.0		7.8	6.1	-21.8		5.2	3.0	-42.5
District of Columbia	8.7	7.2	-16.9		8.2	6.5	-21.2		4.9	4.3	-11.5
Maryland	9.2	6.8	-26.2		7.6	5.6	-26.5		4.6	4.2	-9.2
New Jersey	13.4	9.6	-28.2		11.5	8.8	-23.5		9.1	8.1	-10.8
New York	15.7	13.8	-11.8		13.5	12.0	-10.9		6.3	5.1	-18.6
Pennsylvania	10.8	8.7	-19.8		9.3	7.8	-16.1		6.6	5.5	-16.8
South Atlantic:											
Florida	8.9	8.2	-7.9		7.4	6.9	-6.6		5.7	5.2	-8.7
Georgia	8.5	7.1	-16.9		8.0	6.4	-19.9		4.8	4.2	-12.2
North Carolina	9.0	7.7	-14.2		7.1	6.3	-11.6		5.3	4.6	-13.9
South Carolina	8.4	7.5	-10.3		7.1	6.6	-7.2		4.3	4.0	-7.8
Virginia	8.5	6.9	-18.6		6.6	5.6	-15.0		4.4	4.1	-7.8
West Virginia	7.1	5.9	-17.0		6.4	5.3	-16.7		4.4	3.5	-19.7
East North Central:											
Illinois	11.5	7.8	-32.3		8.9	6.2	-30.2		5.8	4.1	-29.8
Indiana	7.5	6.3	-16.5		6.6	5.6	-15.4		4.4	3.8	-13.3
Michigan	9.4	8.2	-13.2		8.9	7.6	-14.1		5.7	5.2	-8.2
Ohio	9.6	7.6	-20.7		8.6	7.5	-12.7		4.7	4.6	-2.0
Wisconsin	7.7	7.6	-0.9		6.3	6.1	-3.7		4.1	4.2	2.9
West North Central:											
Iowa	9.1	7.7	-15.4		7.3	6.3	-13.5		4.4	3.8	-12.8
Kansas	8.8	7.0	-20.1		7.4	5.9	-20.7		5.2	4.6	-12.2
Minnesota	7.9	7.1	-10.7		6.8	5.2	-24.0		4.7	4.7	0.0
Missouri	7.9	6.0	-24.0		6.7	5.2	-22.8		4.9	4.1	-17.2
Nebraska	7.0	5.5	-21.6		6.1	5.0	-18.3		4.1	3.6	-12.2
North Dakota	6.9	5.8	-15.9		6.8	5.5	-18.7		4.9	3.8	-23.2
South Dakota	7.8	6.8	-12.9		7.3	6.1	-16.7		5.0	4.3	-13.3

Estimated U.S. Electric Average Rates per Kilowatt-hour to Ultimate consumers * *in cents*

Rate Chart 1
1996 Inflation Adjusted

	RESIDENTIAL				COMMERCIAL				INDUSTRIAL		
	1996	2001	%		1996	2001	%		1996	2001	%
East South Central:											
Alabama	7.4	6.5	-12.1		7.2	6.4	-11.5		4.3	3.8	-12.6
Kentucky	6.2	5.2	-16.0		5.8	5.0	-13.6		3.3	3.0	-7.8
Mississippi	7.8	6.6	-15.9		7.9	6.8	-14.0		4.9	4.4	-10.5
Tennessee	6.6	6.2	-5.4		7.4	6.2	-16.2		5.0	4.4	-12.7
West South Central:											
Arkansas	8.7	7.0	-19.2		7.5	5.0	-33.5		5.0	4.3	-13.7
Louisiana	8.4	8.2	-2.6		7.9	8.4	5.8		4.8	6.5	35.0
Oklahoma	7.5	6.6	-11.8		6.5	6.2	-4.1		4.2	4.8	13.9
Texas	8.7	7.8	-10.0		7.5	7.7	2.9		4.5	5.1	13.5
Mountain:											
Arizona	10.0	7.1	-28.8		8.9	6.8	-23.5		5.8	4.9	-15.3
Colorado	8.3	7.0	-16.2		6.6	5.4	-18.3		4.8	4.2	-13.4
Idaho	5.9	5.4	-8.3		4.7	4.5	-5.2		3.0	3.4	13.8
Montana	6.9	6.4	-7.7		6.1	5.7	-7.2		3.7	5.1	38.6
Nevada	7.7	7.7	0.0		7.4	7.3	-0.9		5.5	4.9	-10.3
New Mexico	10.0	8.2	-17.6		8.8	7.2	-18.6		4.8	6.0	23.7
Utah	7.8	6.6	-14.9		6.6	5.3	-19.4		4.1	3.5	-15.1
Wyoming	6.8	6.0	-12.2		5.7	5.1	-9.9		3.8	3.4	-11.6
Pacific Contiguous:											
California	12.6	11.2	-11.3		11.0	11.0	0.4		7.8	8.3	6.8
Oregon	6.3	5.9	-7.0		5.7	5.2	-9.4		3.8	4.3	13.1
Washington	5.6	5.4	-3.7		5.4	5.4	0.0		3.2	5.6	76.3
Pacific Noncontiguous:											
Alaska	12.7	11.3	-10.8		10.7	9.7	-9.2		9.4	7.2	-23.7
Hawaii	15.9	16.6	4.4		14.5	15.1	4.3		11.2	11.7	4.6

Data retrieved from the Energy Information Administration/Electric Sales and Revenue Publications for 1996, 1998, 2000 & 2001.

Data available at www.eia.doe.gov or by calling Rodney Dunn, Survey Manager at (202) 287-1676.

Table prepared by **Citizens for Pennsylvania's Future**, 610 N. Third St., Harrisburg, PA 17101 ph. (717) 214-7920.

Estimated U.S. Electric Average Rates per Kilowatt-hour to Ultimate Consumers * *in cents*

Rate Chart 2
Not Adjusted for Inflation

	RESIDENTIAL				COMMERCIAL				INDUSTRIAL		
	1996	2001	%		1996	2001	%		1996	2001	%
New England:											
Connecticut	12.0	10.5	-12.5		10.3	9.0	-12.6		7.9	7.6	-3.8
Maine	12.6	12.8	1.6		10.4	11.9	14.4		6.3	8.4	33.3
Massachusetts	11.3	11.8	4.4		9.9	9.7	-2.0		8.4	8.7	3.6
New Hampshire	13.4	13.3	-0.7		11.3	11.0	-2.7		9.2	9.3	1.1
Rhode Island	11.8	12.0	1.7		10.1	10.2	1.0		8.5	9.2	8.2
Vermont	11.0	12.4	12.7		10.1	11.3	11.9		7.6	8.3	9.2
Mid-Atlantic:											
Delaware	9.0	7.7	-14.4		7.0	6.1	-12.9		4.7	3.0	-36.2
District of Columbia	7.8	7.2	-7.7		7.4	6.5	-12.2		4.4	4.3	-2.3
Maryland	8.3	6.8	-18.1		6.8	5.6	-17.6		4.2	4.2	0.0
New Jersey	12.0	9.6	-20.0		10.3	8.8	-14.6		8.2	8.1	-1.2
New York	14.0	13.8	-1.4		12.1	12.0	-0.8		5.6	5.1	-8.9
Pennsylvania	9.7	8.7	-10.3		8.3	7.8	-6.0		5.9	5.5	-6.8
South Atlantic:											
Florida	8.0	8.2	2.5		6.6	6.9	4.5		5.1	5.2	2.0
Georgia	7.7	7.1	-7.8		7.2	6.4	-11.1		4.3	4.2	-2.3
North Carolina	8.0	7.7	-3.8		6.4	6.3	-1.6		4.8	4.6	-4.2
South Carolina	7.5	7.5	0.0		6.4	6.6	3.1		3.9	4.0	2.6
Virginia	7.6	6.9	-9.2		5.9	5.6	-5.1		4.0	4.1	2.5
West Virginia	6.4	5.9	-7.8		5.7	5.3	-7.0		3.9	3.5	-10.3
East North Central:											
Illinois	10.3	7.8	-24.3		8.0	6.2	-22.5		5.2	4.1	-21.2
Indiana	6.8	6.3	-7.4		5.9	5.6	-5.1		3.9	3.8	-2.6
Michigan	8.5	8.2	-3.5		7.9	7.6	-3.8		5.1	5.2	2.0
Ohio	8.6	7.6	-11.6		7.7	7.5	-2.6		4.2	4.6	9.5
Wisconsin	6.9	7.6	10.1		5.7	6.1	7.0		3.7	4.2	13.5
West North Central:											
Iowa	8.2	7.7	-6.1		6.5	6.3	-3.1		3.9	3.8	-2.6
Kansas	7.9	7.0	-11.4		6.7	5.9	-11.9		4.7	4.6	-2.1
Minnesota	7.1	7.1	0.0		6.1	5.2	-14.8		4.3	4.7	9.3
Missouri	7.1	6.0	-15.5		6.0	5.2	-13.3		4.4	4.1	-6.8
Nebraska	6.3	5.5	-12.7		5.5	5.0	-9.1		3.7	3.6	-2.7
North Dakota	6.2	5.8	-6.5		6.1	5.5	-9.8		4.4	3.8	-13.6
South Dakota	7.0	6.8	-2.9		6.6	6.1	-7.6		4.5	4.3	-4.4

Estimated U.S. Electric Average Rates per Kilowatt-hour to Ultimate Consumers * *in cents*

Rate Chart 2
Not Adjusted for Inflation

	RESIDENTIAL				COMMERCIAL				INDUSTRIAL		
	1996	2001	%		1996	2001	%		1996	2001	%
East South Central:											
Alabama	6.6	6.4	-3.0		6.5	6.5	0.0		3.9	4.0	2.6
Kentucky	5.6	5.1	-8.9		5.2	4.7	-9.4		2.9	3.0	2.7
Mississippi	7.0	6.5	-7.1		7.1	6.9	-2.7		4.4	4.5	2.0
Tennessee	5.9	6.1	3.4		6.6	6.2	-6.6		4.5	4.6	1.8
West South Central:											
Arkansas	7.8	7.0	-10.3		6.7	5.9	-12.5		4.5	4.2	-6.0
Louisiana	7.6	8.2	7.9		7.1	8.4	18.0		4.3	6.5	50.5
Oklahoma	6.7	6.6	-1.5		5.8	6.2	6.9		3.8	4.8	27.0
Texas	7.8	7.8	0.0		6.7	7.7	14.8		4.0	5.1	26.6
Mountain:											
Arizona	9.0	7.1	-21.1		8.0	6.8	-14.7		5.2	4.9	-5.6
Colorado	7.5	7.0	-6.7		5.9	5.4	-8.9		4.4	4.2	-3.4
Idaho	5.3	5.4	1.9		4.3	4.5	5.6		2.7	3.4	26.9
Montana	6.2	6.4	3.2		5.5	5.7	3.4		3.3	5.0	51.5
Nevada	6.9	7.7	11.6		6.6	7.3	10.4		4.9	4.9	0.0
New Mexico	8.9	8.2	-7.9		7.9	7.2	-9.2		4.4	6.0	37.9
Utah	7.0	6.6	-5.7		5.9	5.3	-10.2		3.7	3.5	-5.4
Wyoming	6.1	6.0	-1.6		5.1	5.1	0.0		3.5	3.4	-1.4
Pacific Contiguous:											
California	11.3	11.2	-0.9		9.8	11.0	11.9		7.0	8.3	19.1
Oregon	5.7	5.9	3.5		5.2	5.2	0.0		3.4	4.3	26.1
Washington	5.0	5.4	8.0		4.9	5.4	10.7		2.9	5.6	96.5
Pacific Noncontiguous:											
Alaska	11.4	11.3	-0.9		9.6	9.7	1.3		8.5	7.2	-15.0
Hawaii	14.3	16.6	16.1		13.0	15.1	16.2		10.0	11.7	16.7

Data retrieved from the Energy Information Administration/Electric Sales and Revenue Publications for 1996, 1998, 2000 & 2001.

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Table prepared by **Citizens for Pennsylvania's Future**, 610 N. Third St., Harrisburg, PA 17101 ph. (717) 214-7920.

Estimated U.S. Electric Average Rates per Kilowatt-hour to Ultimate Consumers * *in cents*

Rate Chart 3
(YTD December 2001 and 2000 Table)
1996 Inflation Adjusted

	RESIDENTIAL				COMMERCIAL				INDUSTRIAL		
	1996	2001	%		1996	2001	%		1996	2001	%
New England:											
Connecticut	13.4	10.9	-18.9		11.5	9.3	-18.9		8.8	7.7	-12.1
Maine	14.0	11.0	-21.6		11.5	11.3	-2.1		7.0	7.0	0.0
Massachusetts	12.5	12.3	-1.9		11.1	10.7	-3.4		9.4	9.7	3.2
New Hampshire	15.0	12.5	-16.6		12.6	10.5	-16.8		10.2	9.2	-9.9
Rhode Island	13.2	12.1	-8.1		11.3	10.4	-8.0		9.5	9.8	3.3
Vermont	12.3	12.5	2.0		11.3	11.1	-1.8		8.5	7.9	-6.5
Mid-Atlantic:											
Delaware	10.0	8.6	-14.0		7.8	7.1	-9.0		5.2	5.1	-2.2
District of Columbia	8.7	7.7	-11.1		8.2	7.7	-6.7		4.9	4.8	-1.2
Maryland	9.2	7.7	-16.4		7.6	6.4	-15.9		4.6	4.4	-4.9
New Jersey	13.4	10.3	-22.9		11.5	9.2	-20.0		9.1	8.4	-7.5
New York	15.7	14.1	-9.9		13.5	13.0	-3.5		6.3	5.2	-17.0
Pennsylvania	10.8	9.7	-10.6		9.3	8.0	-14.0		6.6	5.8	-12.3
South Atlantic:											
Florida	8.9	8.5	-4.6		7.4	7.0	-5.3		5.7	5.4	-5.2
Georgia	8.5	7.9	-7.5		8.0	6.7	-16.2		4.8	4.3	-10.1
North Carolina	9.0	8.2	-8.6		7.1	6.5	-8.8		5.3	4.8	-10.1
South Carolina	8.4	7.6	-9.1		7.1	6.3	-11.4		4.3	3.8	-12.4
Virginia	8.5	7.7	-9.1		6.6	5.8	-12.0		4.4	4.2	-5.6
West Virginia	7.1	6.3	-11.4		6.4	5.4	-15.2		4.4	3.7	-15.1
East North Central:											
Illinois	11.5	8.7	-24.5		8.9	7.2	-19.0		5.8	4.8	-17.8
Indiana	7.5	6.9	-8.6		6.6	5.8	-12.4		4.4	4.0	-8.7
Michigan	9.4	8.4	-11.0		8.9	7.7	-13.0		5.7	5.2	-8.2
Ohio	9.6	8.3	-13.4		8.6	7.7	-10.4		4.7	4.8	2.3
Wisconsin	7.7	7.9	3.0		6.3	6.4	1.1		4.1	4.3	5.4
West North Central:											
Iowa	9.1	8.4	-7.7		7.3	6.7	-8.0		4.4	4.2	-3.6
Kansas	8.8	7.7	-12.1		7.4	6.2	-16.6		5.2	4.6	-12.2
Minnesota	7.9	7.5	-5.6		6.8	5.9	-13.8		4.7	4.6	-3.1
Missouri	7.9	7.0	-11.3		6.7	5.9	-12.4		4.9	4.5	-9.1
Nebraska	7.0	6.6	-5.9		6.1	5.6	-8.5		4.1	3.8	-7.4
North Dakota	6.9	6.7	-2.9		6.8	5.9	-12.8		4.9	4.1	-17.2
South Dakota	7.8	7.7	-1.3		7.3	6.6	-9.9		5.0	4.6	-7.3

Estimated U.S. Electric Average Rates per Kilowatt-hour to Ultimate Consumers * in cents

Rate Chart 3
(YTD December 2001 and 2000 Table)
1996 Inflation Adjusted

	RESIDENTIAL				COMMERCIAL				INDUSTRIAL		
	1996	2001	%		1996	2001	%		1996	2001	%
East South Central:											
Alabama	7.4	7.0	-5.3		7.2	6.6	-8.8		4.3	3.8	-12.6
Kentucky	6.2	5.5	-11.1		5.8	5.1	-11.9		3.3	3.0	-7.8
Mississippi	7.8	7.4	-5.7		7.9	7.0	-11.4		4.9	4.5	-8.5
Tennessee	6.6	6.4	-2.4		7.4	6.3	-14.9		5.0	4.4	-12.7
West South Central:											
Arkansas	8.7	7.7	-11.1		7.5	6.2	-17.5		5.0	4.5	-9.7
Louisiana	8.4	8.0	-5.0		7.9	7.6	-4.3		4.8	5.5	14.2
Oklahoma	7.5	7.2	-3.7		6.5	6.1	-5.7		4.2	4.2	0.0
Texas	8.7	8.7	0.0		7.5	7.6	1.6		4.5	5.2	15.7
Mountain:											
Arizona	10.0	8.3	-16.8		8.9	7.4	-16.7		5.8	5.2	-10.1
Colorado	8.3	7.4	-11.4		6.6	5.7	-13.8		4.8	4.5	-7.2
Idaho	5.9	6.0	1.9		4.7	5.2	9.5		3.0	3.6	20.5
Montana	6.9	7.0	1.0		6.1	6.4	4.2		3.7	5.8	57.7
Nevada	7.7	9.0	17.0		7.4	8.5	15.4		5.5	6.4	17.2
New Mexico	10.0	8.8	-11.6		8.8	7.5	-15.2		4.8	5.4	11.4
Utah	7.8	6.7	-13.6		6.6	5.5	-16.4		4.1	3.6	-12.7
Wyoming	6.8	6.7	-2.0		5.7	5.5	-2.9		3.8	3.5	-9.0
Pacific Contiguous:											
California	12.6	10.9	-13.7		11.0	11.2	2.2		7.8	9.1	17.1
Oregon	6.3	6.3	-0.7		5.7	5.5	-4.2		3.8	4.1	7.9
Washington	5.6	5.7	1.7		5.5	5.4	-1.8		3.2	4.4	38.5
Pacific Noncontiguous:											
Alaska	12.7	12.2	-3.7		10.7	10.1	-5.4		9.4	7.9	-16.3
Hawaii	15.9	16.0	0.6		14.5	14.5	0.0		11.2	11.3	1.1
U.S. Average	9.3	8.48	-9.0		8.5	7.76	-8.9		5.1	5.02	-2.1

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